

Title (en)

HYDRAULIC DEVICE INCLUDING A SPOOL VALVE AND METHOD OF USE THEREOF

Title (de)

HYDRAULISCHE VORRICHTUNG MIT EINEM SPULENVENTIL SOWIE VERWENDUNGSVERFAHREN DAFÜR

Title (fr)

DISPOSITIF HYDRAULIQUE COMPRENANT UN DISTRIBUTEUR À TIROIR ET PROCÉDÉ D'UTILISATION DE CE DISPOSITIF

Publication

EP 2525732 A4 20170426 (EN)

Application

EP 11735241 A 20110121

Priority

- US 29763010 P 20100122
- US 2011022086 W 20110121

Abstract (en)

[origin: WO2011091273A2] A spool valve for controlling fluid communication among hydraulic cylinders operating control and slave portions of a surgical device. The spool valve may be used to disconnect the control and the slave portions from one another such that there is no fluid communication between the control and slave portions. The spool valve may be used to engage or allow fluid communication between the control and slave. The spool valve may also be used to allow fluid communication between the slave and control portion and a fluid reservoir, thus allowing the hydraulic system to replenish fluid lost to evaporation, leakage, or other escape. The spool valve includes a body portion having at least two ports and a spool having at least one passageway moveable to a position so as to communicate with the at least two ports.

IPC 8 full level

F15B 13/02 (2006.01); **A61B 34/30** (2016.01); **B25J 3/00** (2006.01); **F15B 13/04** (2006.01); **F16K 3/26** (2006.01); **F16K 11/07** (2006.01)

CPC (source: EP US)

A61B 34/30 (2016.02 - EP US); **F15B 13/0402** (2013.01 - EP US); **F16K 3/26** (2013.01 - US); **F16K 11/0716** (2013.01 - EP US)

Citation (search report)

- [XAI] US 2008103437 A1 20080501 - DUCHON DOUGLAS J [US], et al
- [XI] DE 1890849 U 19640409 - R L RANDEX SA [FR]
- See references of WO 2011091273A2

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

WO 2011091273 A2 20110728; **WO 2011091273 A3 20111215**; AU 2011207349 A1 20120726; AU 2011207349 A8 20120809; BR 112012018220 A2 20170627; CA 2787462 A1 20110728; CN 102791215 A 20121121; EP 2525732 A2 20121128; EP 2525732 A4 20170426; EP 2525732 B1 20190306; JP 2013518222 A 20130520; MX 2012008481 A 20120817; RU 2012135657 A 20140227; US 2013090668 A1 20130411; US 9050121 B2 20150609; ZA 201205051 B 20130327

DOCDB simple family (application)

US 2011022086 W 20110121; AU 2011207349 A 20110121; BR 112012018220 A 20110121; CA 2787462 A 20110121; CN 201180006734 A 20110121; EP 11735241 A 20110121; JP 2012550160 A 20110121; MX 2012008481 A 20110121; RU 2012135657 A 20110121; US 201113521195 A 20110121; ZA 201205051 A 20120706